23.XXX
WP-2 and WP-3 net with Nansen Releaser

Manual

KC Denmark A/S

Research Equipment
Limnology • Oceanography • Hydrobiology

WP-2 and WP-3 net with Nansen Releaser

IMPORTANT:
Standard delivery does not include the Nansen releaser, order no. 23.250, which must be ordered separately.

The following plankton nets are covered by this manual:

- 23.100 – Ø57 cm
- 23.230 – Ø70 cm
- 23.240 – Ø75 cm
- 23.250 – Ø113 cm

The Nansen releaser (optional) is commonly used for WP-2 and WP-3 plankton nets. It will be used for obtaining a sample of the plankton at any subsurface level without contamination by the organisms living in the overlying water layers.

By means of a messenger the Nansen releaser will activate a mechanism at any desired depth. The bridle lines are released, causing the net to fall and closes off the head end of the net.

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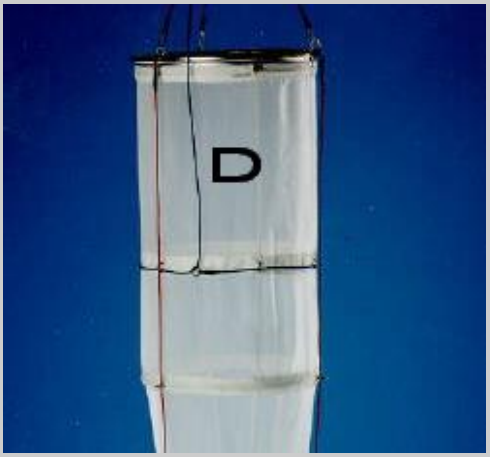
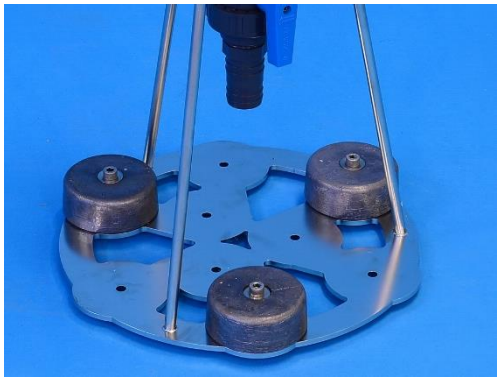
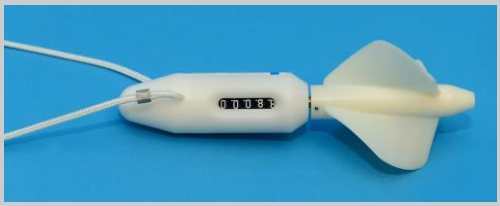
Item	Preparation	
1	Remove the small steel plate at the side of the releaser. Use an Allen key for the bolts 1-4.	
2	Attach the hoisting steel wire to the groove and remount the plate. The maximum diameter for the wire must not exceed 8 mm. Caution **It's very important, that the bolts are tightened firmly so the steel wire is secured; otherwise, you may lose the net and the releaser into the water.**	
3	The "Top fork" (A) is pushed into downward position and the locking pawl (5) at the bottom will be released.	
4	Insert the ring for the bridle lines, release the "Top" and the ring will be locked into the releaser.	

5	The snap hook at the closing line "D" for the plankton net must be attached to "C"	
6	Open the spring loaded drop messenger and attach it to the line. The messenger will support a maximum diameter of 10 mm.	

7	The messenger will go to closed function, and the net is now ready for deployment. When the drop messenger hits "The Top Fork", the lock of the Nansen will be released. The net will fall and gets closed by the line attached to "C" (item 4)	
8	Now the net is closed, and it can be hoisted up. © Photo by Slawomir Wiktorowicz, Institute of Meteorology and Water Management, Maritime Branch in Gdynia, Poland.	

9	Now you can rinse the net with fresh water, so all the sample will be washed down into the sample cylinder at the end of the net. The cylinder has a valve for emptying the sample.	

	Adding lead weights	
10	The bottom plate of the sample cylinder supports attachment of more lead weights	
11	Support for a maximum of 9 lead weights.	

	Digital flow meters	
12	For calculating the volume of water passing through the plankton net, you can attach a digital flow meter. Our WP-2 and WP-3 nets have eyes for mounting of 2- and 3- bridles flow meters. Model 23.090: Easy installation by a double point connection of the nosepiece. Recommended for <u>horizontal</u> operation. Model 23.091 is installed by using a triple point connection inside the net ring. Recommended for <u>vertical</u> operation, as it does not count during the lowering of the net.	 23.090 – No back run stop  23.091 – Back run stop

	Calculating the volume of water
13	The principle to calculate the volume of water is the same for both models, see below. The digital flow meter incorporates a three-blade impeller coupled directly to a five-digit counter that records each revolution of the impeller. Please note that the 23.091 counter cannot be reset to "0". The number of revolutions is read by noting the difference in beginning and end readings. The pitch of the impeller is 0,3 m per revolution, i.e., the number of revolutions multiplied by 0.3 makes the towing distance. For quantitative measurements the threshold flow velocity of the impeller should not be smaller than 0,5 m/sec. For comparison measurements flow velocities smaller than 0,5 m/sec are possible. Example: The number of revolutions is 100; this means a towing distance of 30 m. The opening area of the plankton net must be known or must be calculated. The water volume passed through the plankton net is determined as follows: Indicated number of *revolutions x 0,3 x net opening area (m²) x 1000* = water volume. Example: The plankton net has a diameter of 40 cm, i.e., the opening area is 0,125 m². If the number of revolutions associated with a tow is 266 (noted from the digital flow meter counter), the water volume passed through the plankton net is 266 x 0,3 x 0,125 x 1000 = 9.975 L = 9,975 m³

14	 **Rinse the digital flow meter thoroughly with freshwater after use. Otherwise, the mechanism will get clogged by salt etc.**

	Towing and hoisting speed
15	 You must always consider your hoisting or towing speed to avoid any damages to the plankton cloth itself. The smaller mesh size, the smaller opening for the water

	Maintenance
16	**Nansen releaser:** All parts of the Nansen releaser can be rinsed using salt water or fresh water. Regular cleaning with fresh water is recommended and all moveable parts must be moved individually to ensure all dirt has been removed. **The plankton net:** Give plankton nets proper care and maintenance. Do not let particulate matter dry on the net because it can significantly reduce size of mesh apertures and increase frequency of clogging. Wash net thoroughly with water after each use. Periodically clean with a warm soap solution. It is also advisable to hang-up the net to air-dry after washing. Because nylon net material is susceptible to deterioration from abrasion and sunlight, guard against unnecessary wear and store in the dark.

Safety Regulations

KC Denmark A/S is not, and cannot be held, responsible for any damage(s) made to equipment or to operators who ignore safety precautions or because of misuse or wrong operation.

An expert maintenance technician fully familiar with the attendant hazards must only do all maintenance, inspection and repairs.

When working with the unit in areas, which are difficult to access or hazardous, ensure to take adequate safety precautions for the operator and others in compliance with the provisions of law on health and safety at work.

Replace worn component with original spare parts.

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E-mail: sales@kc-denmark.dk website: http://www.kc-denmark.dk/
Holmbladsvej 17-19, DK 8600 Silkeborg, Denmark. Tel. +45 86 82 83 47
Bank: Sydbank. SWIFT: SYBKDK22 - IBAN DK5070460000104832
VAT no. DK 29 61 96 62